

IN THE CLAIMS:

Please amend Claims 1, 3-6, 8, and 9 as follows. Note that all claims currently pending in the application are being reproduced below for the Examiner's convenience.

1. (Currently Amended) A motor driving apparatus in which excitation current is supplied to windings of plural phases of a stepping motor and said stepping motor is rotatingly driven by successively switching the exciting phases, comprising:

β1 means for exciting a predetermined phase winding among the plural phases of said stepping motor for a predetermined time period without switching the excitation phases, and stopping excitation after the predetermined time period ~~driving and rotating said stepping motor,~~ when a power supply of equipment in which said motor driving apparatus is contained is turned ON;

means for judging whether there is the possibility of deviating a positional relationship between a rotor and a stator of said motor from a positional relationship determined by the excitation of the predetermined phase winding for the predetermined time period, by an external force, before a rotation of said motor is started; and

control means for exciting the predetermined phase winding among the plural phases of said stepping motor again for a predetermined time period without switching the excitation phases, and stopping excitation after the predetermined time period ~~driving and rotating said stepping motor,~~ if the possibility of deviation is judged.

2. (Previously Presented) A motor driving apparatus according to claim 1, wherein said equipment is an image forming apparatus for forming an image on a sheet and said stepping motor rotates a roller for conveying a recording sheet.

3. (Currently Amended) A method for controlling a motor driving apparatus in which excitation current is supplied to windings of plural phases of a stepping motor and said stepping motor is rotatively driven by successively switching the exciting phases, comprising the steps of:

β1 exciting a predetermined phase winding among the plural phases of said stepping motor for a predetermined time period without switching the excitation phases, and stopping excitation after the predetermined time period ~~driving and rotating said stepping motor~~, when a power supply of equipment in which said motor driving apparatus is contained is turned ON;

judging whether there is the possibility of deviating a positional relationship between a rotor and a stator of said motor from a positional relationship determined by the excitation of the predetermined phase winding for the predetermined time period, by an external force, before a rotation of said motor is started; and

controlling to excite the predetermined phase winding among the plural phases of said stepping motor again for a predetermined time period without switching the excitation phases, and stopping excitation after the predetermined time period ~~driving and rotating said stepping motor~~, if the possibility of deviation is judged.

4. (Currently Amended) Control program for a motor driving apparatus in which excitation current is supplied to windings of plural phases of a stepping motor and said stepping motor is rotatively driven by successively switching the exciting phases, comprising the steps of:

β1
exciting a predetermined phase winding among the plural phases of said stepping motor for a predetermined time period without switching the excitation phases, and stopping excitation after the predetermined time period ~~driving and rotating said stepping motor,~~ when a power supply of equipment in which said motor driving apparatus is contained is turned ON;

judging whether there is the possibility of deviating a positional relationship between a rotor and a stator of said motor from a positional relationship determined by the excitation of the predetermined phase winding for the predetermined time period, by an external force, before a rotation of said motor is started; and

controlling to excite the predetermined phase winding among the plural phases of said stepping motor again for a predetermined time period without switching the excitation phases, and stopping excitation after the predetermined time period ~~driving and rotating said stepping motor,~~ if the possibility of deviation is judged.

5. (Currently Amended) A storage medium readable by a computer storing control program for a motor driving apparatus in which excitation current is supplied to windings of plural phases of a stepping motor and said stepping motor is rotatively driven by successively switching the exciting phases, comprising:

means for exciting a predetermined phase winding among plural phases of said stepping motor for a predetermined time period without switching the excitation phases, and stopping excitation after the predetermined time period ~~driving and rotating said stepping motor,~~ when a power supply of equipment in which said motor driving apparatus is contained is turned ON;

means for judging whether there is the possibility of deviating a positional relationship between a rotor and a stator of said motor from a positional relationship determined by the excitation of the predetermined phase winding for the predetermined time period, by an external force, before a rotation of said motor is started; and

control means for exciting the predetermined phase winding the plural phases of said stepping motor again for a predetermined time period without switching the excitation phases, and stopping excitation after the predetermined time period ~~driving and rotating said stepping motor,~~ if the possibility of deviation is judged.

6. (Currently Amended) An image forming apparatus comprising:

means for forming an image on a recording sheet;

means using a stepping motor as a driving source and adapted to convey the recording sheet;

driving means in which excitation current is supplied to windings of plural phases of said stepping motor and said stepping motor is rotatingly driven by successively switching the exciting phases;

means for exciting a predetermined phase winding among the plural phases of said stepping motor for a predetermined time period without switching the excitation phases, and stopping excitation after the predetermined time period ~~driving and rotating said stepping motor,~~ when a power supply of the image forming apparatus is turned ON;

means for judging whether there is the possibility of deviating a positional relationship between a rotor and a stator of said motor from a positional relationship determined by the excitation of the predetermined phase winding for the predetermined time period, by an external force, before a rotation of said motor is started; and

β1 control means for exciting the predetermined phase winding among the plural phases of said stepping motor again for a predetermined time period without switching the excitation phases, and stopping excitation after the predetermined time period ~~driving and rotating said stepping motor,~~ if the possibility of deviation is judged.

7. (Previously Presented) An image forming apparatus according to claim 6, further comprising:

an opening/closing door attached to a main body of said image forming apparatus and opened for recording sheet jam treatment; and

detecting means for detecting whether said door is opened or not,

wherein said control means of said driving means judges whether there is the possibility that the positional relationship between said rotor and said stator is deviated by the external force, on the basis of whether the opening of said door is detected by said detecting means before the driving of said stepping motor is started.

8. (Currently Amended) A motor driving apparatus in which exciting electrical current is supplied to windings of plural phases of a stepping motor and said stepping motor is rotatingly driven by successively switching the exciting phases, wherein

when a power supply of equipment in which said motor driving apparatus is contained is turned ON, a predetermined phase winding among the plural phases of said stepping motor is excited for a predetermined time period without switching the excitation phases, and stopping excitation after the predetermined time period ~~driving and rotating said stepping motor.~~

31 9. (Currently Amended) A method for controlling a motor driving apparatus in which exciting electrical current is supplied to windings of plural phases of a stepping motor and said stepping motor is rotatingly driven by successively switching the exciting phases, wherein

exciting a predetermined phase winding among the plural phases of said stepping motor for a predetermined time period without switching the excitation phases, and stopping excitation after the predetermined time period ~~driving and rotating said stepping motor~~ is effected when a power supply of equipment in which said motor driving apparatus is contained is turned ON without switching the excitation phases, and stopping excitation after the predetermined time period ~~driving and rotating said stepping motor.~~
